

**AMENDMENTS TO THE DRAWINGS**

Provided herewith is a replacement sheet of drawings including Fig. 4 provided to delete reference numeral 39 therefrom.

### **ATTACHMENTS**

Provided herewith is a terminal disclaimer provided with respect to claims 1-5, 9-11, 13 and 14 currently pending over claims 20-23 of U.S. Patent No. 6,911,779. With entry of this terminal disclaimer, the nonstatutory obviousness-type double patenting rejection of record is believed to have been overcome.

### **REMARKS**

Applicant notes with appreciation the thorough and well-reasoned Office Action embodied in Paper No. 20091210. This amendment is submitted to be fully responsive thereto. Applicant also notes with appreciation the entry of the change of power of attorney submitted in this application. An information disclosure statement is also provided concurrent with this amendment along with the corresponding fee.

By way of this amendment, the specification has been amended to provide a definition for  $V_t$ . Support for this amendment is submitted to be inherent in vector physics and the text as provided at page 5, lines 19-31, which states that an electron axial velocity  $V_a$  is converted to a radial gyrational velocity  $V_r$ . Based on laws of physics with respect to momentum conservation, a vector,  $V_a$  in this case, cannot be converted to an orthogonal vector velocity  $V_r$  without an intermediate angular component. Additionally, shown with greater specificity in Fig. 1C, an electron denoted at reference numeral 24 retains motion in a plane other than that of velocity of radial gyration velocity  $V_r$ . Still further, one of ordinary skill in the art appreciates that the term  $V_t$  is routinely used in the art to define electron thermal velocity. This is supported by the attached reference. Support for the specification amendments found on page 10 to note that the reference numeral 79 in Fig. 2A refers to an electric field is found in Fig. A with respect to reference numerals 15 and 17 by analogy as well as being inherently present when voltage is

applied in power supply 70 across components 72 and 81. Support for the amendments on page 16 to note that reference numeral 42 corresponds to a power supply is found by analogy with respect to Fig. 1A, reference numeral 16, as well as the appreciation of one of ordinary skill in the art that the symbol of alternating short and long dashes corresponds to an electric power source. Reference to Fig. 2D as found in the specification as filed at page 11, line 9 has been omitted consistent with the fact that no such figure exists within the pending application. Additionally, with respect to Fig. 1A, reference numerals 202 and 204 have been added to visually depict the magnetic field strength at the positions noted within the apparatus currently being claimed.

Additionally, the specification has been amended to provide reference numerals for the first surface and an opposing surface of the substrate. Such surfaces are depicted throughout the figures and a plasma facing surface, now denoted with respect to reference numeral 208, cited throughout the specification text. Based on the above remarks, it is submitted that no new matter has been added to the application by way of these amendments to the specification.

By way of this amendment, claims 1, 4 and 5 have been amended. Claims 6-8, and 12 are withdrawn; and claims 15-20 have been canceled as directed to a nonelected invention. Applicant reserves the right to advance prosecution of claims directed to the nonelected invention through divisional practice. New claims 21-29 are also added. As a result of these amendments claims 1-5, 9-11, 13, 14 and 21-29 are currently pending. Support for the amendments to claim 1 to recite an opposing surface and a magnetic field source axial with the magnetic field is found *inter alia* in Fig. 1A as filed. Support for the amendments to claim 4 is found in the specification at page 15, lines 10-16. New claim 21 finds support in claim 1 as originally filed as well as in the Figures and at page 5, lines 4-7 with respect to “a permanent

magnet under said substrate". New claims 22-29 find support in claims 2-4, 9-11, 13 and 14, respectively. As such, it is submitted that no new matter has been added to the application by way of these amendments to the claims. Currently, claims 1-4, 9-11, 13 and 14 stand rejected under 35 U.S.C. §112, second paragraph. Claims 1-4, 9-11 and 14 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sakai et al. (U.S. Patent No. 5,717,294). Claim 13 stands rejected under 35 U.S.C. §103(a) over Sakai et al. in view of Kashiwatani et al. (JP 09241406). Lastly, claims 1-4, 9-11, 13 and 14 are rejected on the basis of nonstatutory obviousness-type double patenting with respect to claims 20-23 of U.S. Patent No. 6,911,779. Upon entry of the attached terminal disclaimer, this latter basis of rejection is believed to have been overcome.

**Remarks Directed to Rejection of Claims 1-4, 9-11,  
13 and 14 under 35 U.S.C. §112, Second Paragraph**

The basis for this rejection is ambiguity as to the nomenclature of the substrate surfaces relative to the second surface that constitutes a cathode.

Based on the above amendments and remarks, these rejections are believed to have been overcome.

**Remarks Directed to Rejection of Claims 1-5, 9-11  
and 14 under 35 U.S.C. §102(b) as Anticipated by Sakai et al.**

Paper No. 20091210, section 11 spanning pages 7-8, recites findings for which Sakai et al. is cited that are relevant to pending claims 1-5, 9-11 and 14. In particular, this section states "Fig. 1 depicts an annular magnetic assembly [30] for providing a magnetic field, where figs. 4 and 17 depict the magnetic field [51] which passes through the substrate, and therefore, the first and second surfaces (col. 8, lines 52-53)."

Anticipation has always been held to require absolute identity between the teachings found within a single reference and the pending claims. In *Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989) it was stated, "Every element of the claimed invention must be literally present, arranged as in the claim."

The pending claims now recite "a magnetic field axial with said magnetic field source" (claim 1) and "a permanent magnet under said substrate" (claim 21). Based on the fact that the only magnetic source disclosed in Sakai et al. is a rotary annular magnetic assembly composed of graded orientation magnetic elements that produces a magnetic field intensity gradient along a single axis while the orthogonal axis is approximately uniform in both intensity and direction along the other axis, as shown in Sakai with respect to Figs. 3 and 5. On the basis of these differences alone, independent claims 1 and 21, and those claims that depend therefrom, are submitted to be novel over Sakai et al.

Additionally, the outstanding rejection in section 11, middle of page 7, points to the differential magnetic field strength topography graphs of Sakai et al., Figs. 8 and 24, as being relevant to the claim recitation of "said magnetic field having a portion passing through said substrate is at least two times stronger at said first surface than at said second surface [the cathode]". It is respectfully submitted that the Office reliance on magnetic field topography as depicted in Sakai et al. at Figs. 5-8 and 24 is misplaced. The claims recite that twofold strength differential is between the cathode and the first surface of the substrate and not as gradients across the first surface of the substrate. It is respectfully submitted that Sakai et al. provides no teaching as to magnetic field differentials between the cathode (reference numeral 11) relative to the substrate (reference numeral 13). Furthermore, as the substrate and cathode of Sakai et al. are in physical contact, and also equally spaced from the surrounding annular magnet assembly

(reference numeral 30), one of ordinary skill in the art would not expect such an arrangement to provide at least a twofold differential in magnetic field between the cathode and the first surface of the substrate. This is submitted to represent another basis for the novelty of the pending claims relative to Sakai et al. With independent claims 1 and 21 now believed to be allowable over Sakai et al., the remaining claims that depend therefrom are likewise submitted to be in allowable form.

Applicant submits that additional bases exist for the allowance of subject matter embodied in the pending dependent claims. Applicant reserves the right to make such remarks of record in due course of prosecution in the event that this rejection is maintained. By way of example, dependent claim 4 which depends from claim 1 recites "said substrate moving continuously relative to said magnetic field". It is respectfully submitted that Sakai et al. not only lacks the ability to move the substrate relative to a magnetic field, but also because of the annular magnet assembly detailed in Sakai et al. that such movement is not possible absent radical redesign of the apparatus disclosed therein. Further, based on the substrate of Sakai et al. always being in contact with the cathode, the ability to adjust the potential of the substrate is limited. Based on Applicant's belief that independent claim 1 is currently in allowable form, rejoinder of withdrawn claims dependent therefrom associated with nonelected species is proper. Such rejoinder is respectfully requested.

In light of the above amendments and remarks, reconsideration and withdrawal of the rejection as to claims 1-5, 9-11 and 14 under 35 U.S.C. §102(b) as anticipated by Sakai et al. is requested.

**Remarks Directed to Rejection of Claim 13 under  
35 U.S.C. §103(a) over Sakai et al. in View of Kashiwatani et al.**

The basis of the rejection is that Sakai et al. lacks a teaching as to a flexible web substrate supported by a conveyor roller. Kashiwatani et al. is cited to bolster this deficiency of Sakai et al.

Based on claim 13 being dependent from claim 1, now believed to be in allowable form, and the above-detailed limitations of Sakai et al., especially those with respect to the annular magnet assembly, which Kashiwatani et al. fails to bolster, it is respectfully submitted that claim 13 is now in allowable form.

Based on the above remarks, reconsideration and withdrawal of the rejection as to claim 13 under 35 U.S.C. §103(a) over Sakai et al. in view of Kashiwatani et al. is requested.

**Summary**

By way of this amendment, claims 1, 4 and 5 have been amended; claims 5-8 and 12 have been withdrawn; claims 15-20 canceled; and new claims 21-29 newly presented. Each of the pending claims is now believed to be in allowable form and directed to patentable subject matter. Reconsideration and withdrawal of the outstanding rejections and the passing of this application to allowance are respectfully requested. In the event that the Examiner has any suggestion as to how to improve the form of any of the pending claims, it is respectfully requested that the undersigned attorney in charge of this application be contacted at the telephone number given below to implement such suggestions.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 07-1180.

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Respectfully submitted,

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